

METHOD AND SYSTEM FOR IMPLEMENTING A REDUCED COMPLEXITY
DUAL RATE ECHO CANCELLER

ABSTRACT

A dual rate echo canceller is provided for applications with asymmetric transmit and receive rates. In particular, the present invention provides Reduced Complexity Dual Rate Echo Cancellor (RCDR-EC) architecture along with low complexity Least Mean Square (LMS) update rules. According to one aspect, the present invention is directed to an echo canceller that provides rate matching functionality for applications (e.g., ADSL, VDSL, etc.) with asymmetric data rates. The RCDR-EC of the present invention operates at the lower of the two rates, receive and transmit, requiring less computation per data sample. RCDR-EC implements a significantly smaller length echo cancellation filter (ECF) for achieving the same (or similar) level of echo suppression of conventional implementations. This reduces the hardware requirement for implementation of RCDR-EC.